

Bio-inspired Electricity

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14:00

Aula III

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Living organisms are able to harvest energy from different sources and use it on demand for their needs. Plants, for instance, transform sun light into chemical energy, while animals (including humans) use the chemical energy contained in food. This energy is mainly stored in two different forms: chemical bonds and concentration gradients. The knife fish *electrophorus electricus*, commonly known as electric eel, teaches us that concentration gradients of ions across biological membranes can be converted into electric energy. These animals use a repeat sequence of cells and membranes to generate electric discharges with peak potential differences up to 600-800 volts and currents of 1 ampere. Taking inspiration from the eel and other electric fishes, our lab developed different types of small-scale bioinspired power units, which will be presented and discussed during this seminar.

